

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A communication system comprising:

a home network installed with a home agent for holding mobile terminal location information of a mobile terminal, the mobile terminal using a first home address in the home network;

a visited network installed with a radio communications device for communicating with a mobile terminal; and

gateway equipment in said visited network for forming an interface with said home network, wherein said radio communication device contains an access request transfer means for forwarding access requests from said mobile terminal having moved to the visited network to said gateway equipment,

wherein said gateway equipment comprises:

a prefix request means for requesting a prefix for said mobile terminal having moved to the visited network from said home agent in response to an access request from said mobile terminal having moved to the visited network, said prefix being related to the first home address of said mobile terminal in the home network, and

a prefix transfer means for receiving the requested prefix from said home agent and forwarding the received prefix to said mobile terminal having moved to the visited network, and

wherein the prefix is used, by said mobile terminal, to generate a second home address in ~~of~~ said mobile terminal having moved to the visited network, said second home address indicating a home address of said mobile terminal in the visited network.

2. (previously presented) A communication system according to claim 1, wherein along with making a prefix acquisition request, said prefix request means also requests acquisition of Domain Name Server (DNS) server information from said home agent, and

wherein said prefix transfer means forwards the acquired DNS server information along with said prefix to said mobile terminal having moved to the visited network.

3. (previously presented) A communication system according to claim 1, further comprising:

decision means for deciding whether or not authentication processing of said mobile terminal having moved to the visited network is required, utilizing a source address of the access request from said mobile terminal having moved to the visited network; and

authentication means for starting authentication processing of said mobile terminal having moved to the visited network when said decision means decides that authentication processing is required,

wherein said prefix request means makes a request to said home agent for acquisition of said mobile terminal prefix after said authentication is successful.

4. (previously presented) A communication system according to claim 3, wherein said gateway equipment further comprises:

location information holding means for holding location information on said mobile terminal having moved to the visited network,

wherein said authentication means starts said authentication processing after said location information holding means has received a location registration request from said mobile terminal having moved to the visited network.

5. (previously presented) A communication system according to claim 4, wherein said location information holding means holds location information on said mobile terminal having moved to the visited network after said authentication processing was successful.

6. (currently amended) A communication system comprising:
a home network installed with a home agent for holding mobile terminal location information of a mobile terminal, the mobile terminal using a first home address in the home network,

a visited network installed with a radio communications device for communicating with a mobile terminal; and

gateway equipment in said visited network for forming an interface with said home network, wherein said radio communication device contains an access request transfer means for forwarding access requests from said

mobile terminal having moved to the visited network to said gateway equipment,

wherein said gateway equipment comprises:

a prefix request means for requesting a prefix for said mobile terminal having moved to the visited network from said home agent in response to an access request from said mobile terminal having moved to the visited network, said prefix being related to the first home address of said mobile terminal in the home network, and

a prefix transfer means for receiving the requested prefix from said home agent and forwarding the received prefix to said mobile terminal having moved to the visited network,

wherein said mobile terminal comprises:

home address creation means for acquiring said prefix from said prefix transfer means of said gateway equipment and creating, by said mobile terminal, based on said prefix, a second home address, said second home address indicating a home address of said mobile terminal in the visited network, and

binding information registration means for registering information corresponding to said second home address created from said prefix and identification information of said mobile terminal having moved to the visited network at a Domain Name Server (DNS) server in the visited network, relay network or in a home network.

7. (previously presented) A communication system according to claim 1, further comprising:

network management equipment connected to said home network and said visited network, wherein said home agent and said gateway equipment comprise acquisition means for acquiring, from said network management equipment, programs and data required for distributing prefixes and authenticating said mobile terminal.

8. (currently amended) A gateway equipment, installed in a visited network containing a radio communications device for communicating with a mobile terminal, for forming an interface with a home network containing a home agent for holding location information on said mobile terminal, the mobile terminal using a first home address in the home network, said gateway equipment comprising:

a prefix acquisition request means for requesting acquisition of a prefix for said mobile terminal having moved to the visited network from said home agent in response to an access request from said mobile terminal having moved to the visited network, said prefix being related to the first home address of said mobile terminal in the home network; and

a prefix transfer means for receiving the requested prefix from said home agent and forwarding the received prefix to said mobile terminal having moved to the visited network;

wherein the prefix is used, by said mobile terminal, to generate a second home address ~~in~~ of said mobile terminal having moved to the visited network, said second home address indicating a home address of said mobile terminal in the visited network.

9. (previously presented) A gateway equipment according to claim 8, wherein said prefix request means makes a prefix acquisition request and a Domain Name Server (DNS) server information acquisition request to said home agent, and

wherein said prefix transfer means forwards the acquired DNS server information along with said prefix to said mobile terminal having moved to the visited network.

10. (previously presented) A gateway equipment according to claim 8, further comprising:

decision means for deciding whether or not authentication processing using a source address for the access request from said mobile terminal having moved to the visited network is required; and

authentication means for starting authentication processing of said mobile terminal having moved to the visited network when said decision means decides that authentication is required,

wherein said prefix request means makes a request to said home agent to acquire the prefix of said mobile terminal having moved to the visited network after said authentication was successful.

11. (previously presented) A gateway equipment according to claim 10, further comprising:

location information holding means for holding information of a location of said mobile terminal having moved to the visited network,

wherein said authentication means starts said authentication processing after receiving a location registration request from said mobile terminal having moved to the visited network for said location information holding means.

12. (previously presented) A gateway equipment according to claim 11, wherein said location information holding means holds location information of said mobile terminal having moved to the visited network after said authentication was successful.

13. (currently amended) A communication method in a communication system including a home network installed with a home agent for holding mobile terminal location information of a mobile terminal, a visited network installed with a radio communication device for communicating with a mobile terminal, and gateway equipment in said visited network for forming an interface with said home network, the mobile terminal using a first home address in the home network, said communication method comprising:

forwarding, by said radio communication device, an access request from said mobile terminal having moved to the visited network to said gateway equipment;

making, by said gateway equipment, an acquisition request to said home agent for a prefix for said mobile terminal having moved to the visited network and forwarding an acquired prefix to said mobile terminal having moved to the visited network, said prefix being related to the first home address of said mobile terminal in the home network; and

creating, by said mobile terminal having moved to the visited network, a second home address based on said prefix acquired from said gateway equipment, searching a Domain Name Server (DNS) terminal and forwarding a packet addressed to said mobile terminal having moved to the visited network by registering mapping information along with said second home address generated from said prefix and a mobile terminal identification information in a DNS server within a relay network or home network, said second home address indicating a home address of said mobile terminal in the visited network.

14. (previously presented) A communication method according to claim 13, further comprising:

making, by said gateway equipment, a DNS server information acquisition request and a prefix request to said home agent, and forwarding said acquired DNS server information and identifier to said mobile terminal having moved to the visited network.

15. (previously presented) A communication method according to claim 13, further comprising:

deciding, by said gateway equipment, whether or not authentication processing is required using a source address of the access request from said mobile terminal having moved to the visited network;

starting, by said gateway equipment, the authentication processing for the mobile terminal having moved to the visited network when it is decided by said deciding step that authentication is required; and

requesting, by said gateway equipment, acquisition of a prefix for said mobile terminal from said home agent after the authentication was successful.

16. (previously presented) A communication method according to claim 15, further comprising:

holding, by said gateway equipment, the location information of said mobile terminal having moved to the visited network; and

starting, by said gateway equipment, said authentication processing after receiving a location registration request from said mobile terminal having moved to the visited network.

17. (previously presented) A communication method according to claim 16, further comprising:

holding, by said gateway equipment, said mobile terminal location information after said authentication was successful.

18. (previously presented) A communication method according to claim 13, further comprising:

acquiring, by said mobile terminal, having moved to the visited network said prefix from said gateway equipment and creating a second home address for said mobile terminal having moved to the visited network, and

registering mapping information, with said second home address generated from said prefix and said mobile terminal identification information, in a DNS server within a home network, or a visited network or relay network.

19. (previously presented) A communication method according to claim 13, wherein said communication system further includes a network management equipment connected to said home network and said visited network,

wherein said home agent and said gateway equipment acquire programs and data from said network management equipment required for distributing the prefixes and authenticating mobile terminals.

20. (currently amended) An authentication method for a mobile terminal used in a communication system which includes a home network installed with a home agent for holding mobile terminal location information of a mobile terminal, a visited network installed with a radio communications device for communicating with a mobile terminal, and gateway equipment in said visited network for forming an interface with said home network, the mobile terminal using a first home address in the home network,

wherein said radio communication device forwards an access request from said mobile terminal having moved to the visited network to said gateway equipment, said authentication method comprising:

making, by said gateway equipment, an acquisition request to said home agent for a prefix for said mobile terminal having moved to the visited network forwarding an acquired prefix to said mobile terminal having moved to the visited network, and authenticating said mobile terminal, said prefix being related to the first home address of said mobile terminal in the home network,

wherein the prefix is used, by said mobile terminal, to generate a second home address in said mobile terminal having moved to the visited

network, said second home address indicating a home address of said mobile terminal in the visited network.

21. (previously presented) An authentication method according to claim 20, further comprising:

deciding, by said gateway equipment, whether or not authentication processing is required using a source address of the access request from said mobile terminal having moved to the visited network, and

performing, by said gateway equipment, authentication processing when it is decided that authentication is necessary.

22. (previously presented) An authentication method according to claim 21, further comprising:

holding, by said gateway equipment, the location information of said mobile terminal having moved to the visited network, and

performing, by said gateway equipment, authentication processing after receiving a location registration request from said mobile terminal having moved to the visited network.

23. (previously presented) An authentication method according to claim 21, further comprising:

holding, by said gateway equipment, said mobile terminal location information after said authentication was successful.

24. (currently amended) An authentication method for a mobile terminal used in a communication system which includes a home network installed with a home agent for holding mobile terminal location information of a mobile terminal, a visited network installed with a radio communications device for communicating with a mobile terminal, and gateway equipment in said visited network for forming an interface with said home network, the mobile terminal using a first home address in the home network, wherein said radio communication device forwards an access request from said mobile terminal having moved to the visited network to said gateway equipment, said authentication method comprising:

making, by said gateway equipment, an acquisition request to said home agent for a prefix for said mobile terminal having moved to the visited network, forwarding an acquired prefix to said mobile terminal having moved to the visited network and authenticating said mobile terminal having moved to the visited network, said prefix being related to the first home address of said mobile terminal in the home network;

acquiring, by said mobile terminal having moved to the visited network, said prefix from said gateway equipment and creating, by said mobile terminal, a second home address for said mobile terminal having moved to the visited network, said second home address indicating a home address of said mobile terminal in the visited network; and

registering mapping information, with said second home address generated from said prefix and a mobile terminal identification information, in a DNS server within a home network, or a visited network or relay network.

25. (previously presented) An authentication method according to claim 20, wherein said communication system further includes a network management equipment connected to said home network and said visited network, wherein said home agent and said gateway equipment acquire programs and data from said network management equipment required for distributing the prefixes and authenticating mobile terminals.